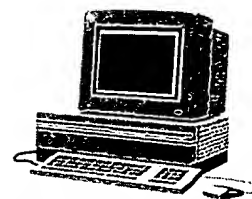


# BioTech-Chem Library

## Search Results

### Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the BioTech-Chem searcher* who conducted the search *or contact*:

Mary Hale, Supervisor, 308-4258  
CM-1 Room 1E01

---

#### *Voluntary Results Feedback Form*

➤ *I am an examiner in Workgroup:* (Example: 1610)

➤ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

**Other Comments:**

---

Drop off completed forms at the **Circulation Desk CM-1**, or send to Mary Hale, CM1-1E01 or e-mail [mary.hale@uspto.gov](mailto:mary.hale@uspto.gov).

=> fil reg

FILE 'REGISTRY' ENTERED AT 14:21:43 ON 04 MAY 2003  
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Jan Delaval  
Reference Librarian  
Biotechnology & Chemical Library  
CM1 1E07 - 703-308-4498  
jan.delaval@uspto.gov

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 2 MAY 2003 HIGHEST RN 509953-09-7  
DICTIONARY FILE UPDATES: 2 MAY 2003 HIGHEST RN 509953-09-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STN Note 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d ide can 17

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS  
RN 6788-84-7 REGISTRY  
CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN 1,2-Dioxacyclobutane  
CN Dioxetane  
FS 3D CONCORD  
MF C2 H4 O2  
CI RPS  
LC STN Files: AGRICOLA, BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA, CANCERLIT,  
CAOLD, CAPLUS, CASREACT, CIN, DETHERM\*, MEDLINE, PIRA, PROMT, SPECINFO,  
TOXCENTER, USPAT2, USPATFULL  
(\*File contains numerically searchable property data)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

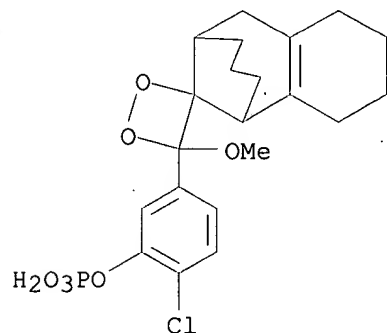
235 REFERENCES IN FILE CA (1957 TO DATE)  
140 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
236 REFERENCES IN FILE CAPLUS (1957 TO DATE)  
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 138:232942  
REFERENCE 2: 138:204648  
REFERENCE 3: 138:69486  
REFERENCE 4: 137:306956  
REFERENCE 5: 137:246527

REFERENCE 6: 137:244282  
REFERENCE 7: 137:176455  
REFERENCE 8: 137:106074  
REFERENCE 9: 137:62928  
REFERENCE 10: 137:2769

=> d ide can tot 110

L10 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2003 ACS  
RN 260791-04-6 REGISTRY  
CN Phenol, 2-chloro-5-(1',2',3',4',5',6',7',8',9',10'-decahydro-4-methoxyspiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)  
MF C21 H26 Cl O7 P . 2 Na  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

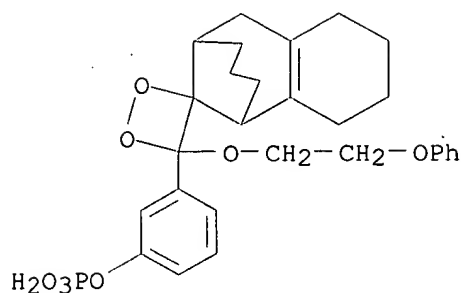


● 2 Na

2 REFERENCES IN FILE CA (1957 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 136:147113  
REFERENCE 2: 132:207956

L10 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2003 ACS  
RN 260791-02-4 REGISTRY  
CN Phenol, 3-[1',2',3',4',5',6',7',8',9',10'-decahydro-4-(2-phenoxyethoxy)spiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl]-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)  
MF C28 H33 O8 P . 2 Na  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

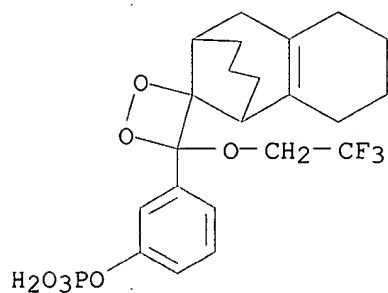


● 2 Na

1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 132:207956

L10 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2003 ACS  
RN 260791-00-2 REGISTRY  
CN Phenol, 3-[1',2',3',4',5',6',7',8',9',10'-decahydro-4-(2,2,2-trifluoroethoxy)spiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl]-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)  
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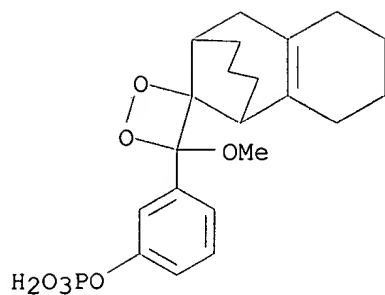


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1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 132:207956

L10 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2003 ACS  
RN 260790-98-5 REGISTRY  
CN Phenol, 3-(1',2',3',4',5',6',7',8',9',10'-decahydro-4-methoxyspiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)  
MF C21 H27 O7 P . 2 Na  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

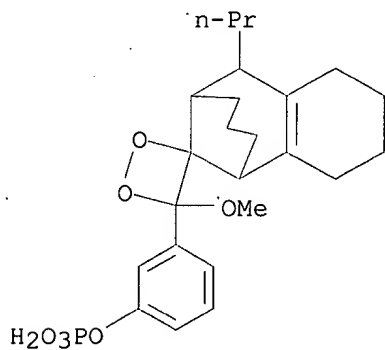


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1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 132:207956

L10 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2003 ACS  
RN 260790-97-4 REGISTRY  
CN Phenol, 3-(1',2',3',4',5',6',7',8',9',10'-decahydro-4-methoxy-10'-propylspiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)  
MF C24 H33 O7 P . 2 Na  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL

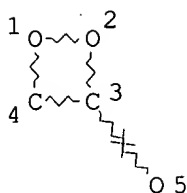


●2 Na

1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 132:207956

=> d sta que 113  
L11 STR



Generic  
Structure -  
Open

NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE  
L13 742 SEA FILE=REGISTRY SSS FUL L11

100.0% PROCESSED 4468 ITERATIONS 742 ANSWERS  
SEARCH TIME: 00.00.01

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SET COST OFF

FILE 'HCAPLUS' ENTERED AT 13:34:25 ON 04 MAY 2003  
E US20020013250/PN

L1 1 S E3  
E GIRI B/AU  
L2 31 S E3,E5,E11,E12  
L3 1 S L1 AND L2  
L4 30 S L2 NOT L3  
SEL RN L3

FILE 'REGISTRY' ENTERED AT 13:37:16 ON 04 MAY 2003

L5 28 S E1-E28  
L6 1 S L5 AND C21H26CLO7P  
L7 1 S L5 AND O2C2/ES  
L8 6 S 61222.4/RID  
L9 5 S L8 NOT RPS/CI  
L10 5 S L6,L9  
L11 STR  
L12 41 S L11  
L13 742 S L11 FUL  
SAV TEMP L13 GITOMER883/A  
L14 737 S L13 NOT L10

FILE 'HCAPLUS' ENTERED AT 13:42:49 ON 04 MAY 2003

L15 2 S L10  
L16 235 S L7  
L17 142 S L7/D  
L18 1 S L15 AND L16,L17  
L19 2 S L15,L18  
L20 541 S L14  
L21 712 S L16,L17,L20  
L22 4 S L21 AND L1-L4  
L23 4 S L19,L22

L24 22218 S BETA GALACTOSIDASE  
L25 48559 S (ALK OR ALKALIN?) () PHOSPHATASE  
L26 21874 S CHOLINESTERASE

FILE 'REGISTRY' ENTERED AT 13:48:45 ON 04 MAY 2003  
L27 3 S 9001-78-9 OR 9031-11-2 OR 9001-08-5

FILE 'HCAPLUS' ENTERED AT 13:49:02 ON 04 MAY 2003  
L28 56600 S L27  
L29 164 S L21 AND L24-L26  
L30 141 S L21 AND L28  
L31 116 S L21 AND ENZYM?/SC, SX, CW  
L32 223 S L29-L31  
E CHEMILUMINESCENCE/CT  
E E3+ALL  
E E2+ALL  
L33 7858 S E5, E4+NT  
E E3+ALL  
L34 200292 S E3+NT  
E E45+ALL  
E E9+ALL  
L35 713 S E4, E5  
L36 39790 S E3+NT  
E E6+ALL  
E E8+ALL  
L37 2486 S E4-E6, E3+NT  
L38 357 S L21 AND L33-L37  
L39 135 S L38 AND L32  
L40 223 S L32, L39  
SEL RN L23

FILE 'REGISTRY' ENTERED AT 14:03:41 ON 04 MAY 2003  
L41 102 S E1-E102  
L42 13 S L41 AND L13  
L43 1 S L41 AND L7  
L44 14 S L42, L43  
L45 14 S L10, L44  
L46 3 S L41 AND L27  
L47 85 S L41 NOT L42-L46  
L48 6 S L47 AND PMS/CI  
L49 5 S L48 NOT CH2O

FILE 'HCAPLUS' ENTERED AT 14:07:47 ON 04 MAY 2003  
L50 31 S L49  
L51 16 S L50 AND L40  
L52 19 S L50 AND L21  
L53 19 S L51, L52

FILE 'REGISTRY' ENTERED AT 14:12:36 ON 04 MAY 2003  
L54 1 S 9017-80-5  
L55 1 S 135781-07-6  
L56 1 S 135781-07-6  
L57 1 S 146985-47-9  
L58 1 S 161697-30-9  
L59 1 S 181871-50-1

FILE 'HCAPLUS' ENTERED AT 14:14:30 ON 04 MAY 2003  
L60 468 S L54-L59  
L61 15 S L60 AND L21  
L62 24 S L53, L61

FILE 'REGISTRY' ENTERED AT 14:15:13 ON 04 MAY 2003  
L63 79 S L47 NOT L48-L49

L64 79 S L63 NOT L13  
L65 18 S L64 AND L5  
L66 61 S L64 NOT L65  
L67 1 S L66 AND METHANOL  
L68 19 S L65,L67

FILE 'HCAPLUS' ENTERED AT 14:17:09 ON 04 MAY 2003

L69 8 S L68 AND L62  
L70 11 S L69,L23  
L71 11 S L70 AND L1-L4,L15-L26,L28-L40,L50-L53,L60-L62,L69-L70  
L72 9 S L71 AND ?POLYM?  
L73 2 S L71 NOT L72  
L74 11 S L73,L72  
L75 4 S L74 AND GIRI ?/AU  
L76 7 S L74 NOT L75  
L77 2 S L76 AND SAPPHIR? II  
L78 7 S L76,L77  
L79 10 S L74 AND DIOXETAN?  
L80 11 S L74-L79  
L81 7 S L80 NOT GIRI ?/AU  
L82 4 S L80 NOT L81

FILE 'REGISTRY' ENTERED AT 14:21:43 ON 04 MAY 2003

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 14:22:52 ON 04 MAY 2003

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FILE COVERS 1907 - 4 May 2003 VOL 138 ISS 19

FILE LAST UPDATED: 2 May 2003 (20030502/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l82 all hitstr tot

L82 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:90601 HCAPLUS

DN 136:147113

TI Single molecule detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-soluble, water-insoluble or partially-water soluble polymers

IN Giri, Brij P.

PA USA

SO U.S. Pat. Appl. Publ., 19 pp.

CODEN: USXXCO

DT Patent

LA English

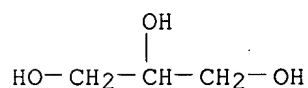
IC ICM C12S009-00



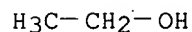
ICS C11D003-00  
 NCL 510392000  
 CC 7-1 (Enzymes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002013250	A1	20020131	US 2001-883586	20010618 <--
PRAI	US 2000-212883P	P	20000617		
OS	MARPAT 136:147113				
AB	<p>A chemiluminescent 1,2-dioxetane includes an enzyme-triggerable stable 1,2-dioxetane; a polymeric enhancer which is either an ammonium or phosphonium salt of a polyvinylbenzyl chloride; and an aq. enzyme diluent or stabilizer comprising a metal halide, alc., amine-based salt, or blood or plant protein. The system is efficacious for single mol. detection of enzymes such as alk. phosphatase, .beta.-galactosidase, and cholinesterase. Thus, chemiluminescence detn. of alk. phosphatase using [(4-methoxy)-4-(3-phosphoryloxy-4-chlorophenyl)]sipro[1,2-dioxetane-3,3-tricyclo[7.3.1.02,7]tridec-2,7-ene] disodium salt and polyvinylbenzyltrioctylphosphonium chloride was demonstrated.</p>				
ST	phosphatase chemiluminescence detn dioxetane polyvinylbenzyltrioctylphosphonium chloride				
IT	Alcohols, analysis				
	Halides				
	RL: ARU (Analytical role, unclassified); ANST (Analytical study) (enzyme stabilizer; single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)				
IT	Proteins				
	RL: ARU (Analytical role, unclassified); ANST (Analytical study) (of blood or plant, enzyme stabilizer; single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)				
IT	Amines, analysis				
	RL: ARU (Analytical role, unclassified); ANST (Analytical study) (salts, enzyme stabilizer; single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)				
IT	Chemiluminescence spectroscopy				
	(single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)				
IT	Polymers, analysis				
	RL: ARU (Analytical role, unclassified); ANST (Analytical study) (trialkylammonium- or trialkylphosphonium; single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)				
IT	56-81-5, Glycerol, analysis 64-17-5, Ethanol, analysis 67-63-0, Isopropyl alcohol, analysis 71-23-8, Propyl alcohol, analysis 71-36-3, Butyl alcohol, analysis 75-65-0, tert-Butyl alcohol, analysis 77-86-1, Tris 78-83-1, Isobutyl alcohol, analysis 78-92-2, sec-Butyl alcohol 102-71-6, Triethanolamine, analysis 107-21-1, Ethylene glycol, analysis 109-86-4, Ethylene glycol methyl ether 111-42-2, Diethanolamine, analysis 124-68-5, 2-Amino-2-methyl-1-propanol 7447-40-7, Potassium chloride, analysis 7646-85-7, Zinc chloride, analysis 7647-14-5, Sodium chloride, analysis 7786-30-3, Magnesium chloride, analysis				
	RL: ARU (Analytical role, unclassified); ANST (Analytical study) (enzyme stabilizer; single mol. detection of enzymes using enhanced				

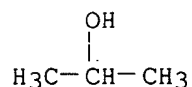
- chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)
- IT 9001-08-5, Cholinesterase 9001-78-9  
9031-11-2, .beta.-Galactosidase  
RL: ANT (Analyte); ANST (Analytical study)  
(single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)
- IT 6788-84-7D, 1,2-Dioxetane, derivs. 260791-04-6  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)
- IT 72852-29-0, Polyvinylbenzyltributylammonium chloride  
77519-21-2 151346-37-1 151346-38-2  
393869-24-4  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)
- IT 56-81-5, Glycerol, analysis 64-17-5, Ethanol, analysis 67-63-0, Isopropyl alcohol, analysis 71-23-8, Propyl alcohol, analysis 71-36-3, Butyl alcohol, analysis 75-65-0, tert-Butyl alcohol, analysis 77-86-1, Tris 78-83-1, Isobutyl alcohol, analysis 78-92-2, sec-Butyl alcohol 102-71-6, Triethanolamine, analysis 107-21-1, Ethylene glycol, analysis 109-86-4, Ethylene glycol methyl ether 111-42-2, Diethanolamine, analysis 124-68-5, 2-Amino-2-methyl-1-propanol 7447-40-7, Potassium chloride, analysis 7646-85-7, Zinc chloride, analysis 7647-14-5, Sodium chloride, analysis 7786-30-3, Magnesium chloride, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(enzyme stabilizer; single mol. detection of enzymes using enhanced chemiluminescence from 1,2-dioxetanes and water-sol., water-insol. or partially-water sol. polymers)
- RN 56-81-5 HCAPLUS  
CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



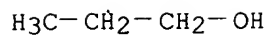
- RN 64-17-5 HCAPLUS  
CN Ethanol (9CI) (CA INDEX NAME)



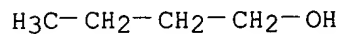
- RN 67-63-0 HCAPLUS  
CN 2-Propanol (9CI) (CA INDEX NAME)



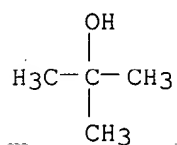
- RN 71-23-8 HCAPLUS  
CN 1-Propanol (9CI) (CA INDEX NAME)



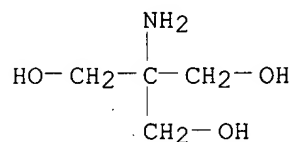
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CN 1-Butanol (9CI) (CA INDEX NAME)



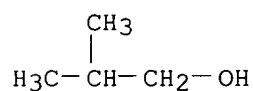
RN 75-65-0 HCAPLUS  
CN 2-Propanol, 2-methyl- (9CI) (CA INDEX NAME)



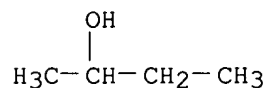
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CN 1,3-Propanediol, 2-amino-2-(hydroxymethyl)- (8CI, 9CI) (CA INDEX NAME)



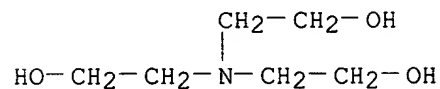
RN 78-83-1 HCAPLUS  
CN 1-Propanol, 2-methyl- (9CI) (CA INDEX NAME)



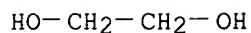
RN 78-92-2 HCAPLUS  
CN 2-Butanol (9CI) (CA INDEX NAME)



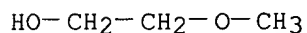
RN 102-71-6 HCAPLUS  
CN Ethanol, 2,2',2''-nitrilotris- (9CI) (CA INDEX NAME)



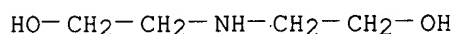
RN 107-21-1 HCAPLUS  
CN 1,2-Ethanediol (9CI) (CA INDEX NAME)



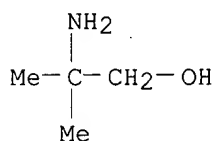
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CN Ethanol, 2-methoxy- (8CI, 9CI) (CA INDEX NAME)



RN 111-42-2 HCAPLUS  
CN Ethanol, 2,2'-iminobis- (9CI) (CA INDEX NAME)



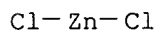
RN 124-68-5 HCAPLUS  
CN 1-Propanol, 2-amino-2-methyl- (8CI, 9CI) (CA INDEX NAME)



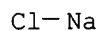
RN 7447-40-7 HCAPLUS  
CN Potassium chloride (KCl) (9CI) (CA INDEX NAME)



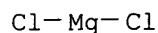
RN 7646-85-7 HCAPLUS  
CN Zinc chloride (ZnCl<sub>2</sub>) (9CI) (CA INDEX NAME)



RN 7647-14-5 HCAPLUS  
CN Sodium chloride (NaCl) (9CI) (CA INDEX NAME)



RN 7786-30-3 HCAPLUS  
CN Magnesium chloride (MgCl<sub>2</sub>) (9CI) (CA INDEX NAME)



IT 9001-08-5, Cholinesterase 9001-78-9  
9031-11-2, .beta.-Galactosidase  
RL: ANT (Analyte); ANST (Analytical study)  
(single mol. detection of enzymes using enhanced chemiluminescence from  
1,2-dioxetanes and water-sol., water-insol. or

partially-water sol. polymers)  
 RN 9001-08-5 HCAPLUS  
 CN Esterase, choline (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9001-78-9 HCAPLUS  
 CN Phosphatase, alkaline (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

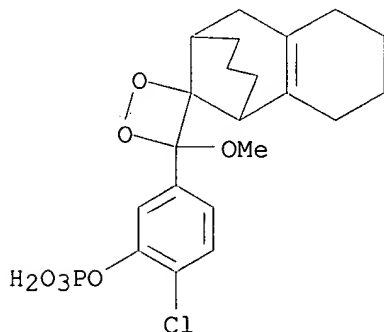
RN 9031-11-2 HCAPLUS  
 CN Galactosidase, .beta.- (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 6788-84-7D, 1,2-Dioxetane, derivs. 260791-04-6  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (single mol. detection of enzymes using enhanced chemiluminescence from  
 1,2-dioxetanes and water-sol., water-insol. or  
 partially-water sol. polymers)  
 RN 6788-84-7 HCAPLUS  
 CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 260791-04-6 HCAPLUS  
 CN Phenol, 2-chloro-5-(1',2',3',4',5',6',7',8',9',10'-decahydro-4-methoxyspiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)

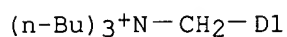
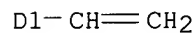


● 2 Na

IT 72852-29-0, Polyvinylbenzyltributylammonium chloride  
 77519-21-2 151346-37-1 151346-38-2  
 393869-24-4  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (single mol. detection of enzymes using enhanced chemiluminescence from  
 1,2-dioxetanes and water-sol., water-insol. or  
 partially-water sol. polymers)  
 RN 72852-29-0 HCAPLUS  
 CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

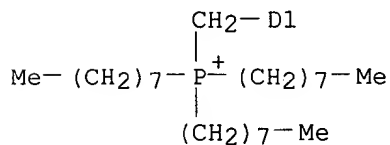
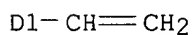
CRN 62017-56-5  
 CMF C21 H36 N . Cl  
 CCI IDS



RN 77519-21-2 HCAPLUS  
 CN Phosphonium, [(ethenylphenyl)methyl]trioctyl-, chloride, homopolymer (9CI)  
 (CA INDEX NAME)

CM 1

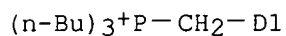
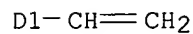
CRN 77519-20-1  
 CMF C33 H60 P . Cl  
 CCI IDS



RN 151346-37-1 HCAPLUS  
 CN Phosphonium, tributyl[(ethenylphenyl)methyl]-, chloride, homopolymer (9CI)  
 (CA INDEX NAME)

CM 1

CRN 42808-25-3  
 CMF C21 H36 P . Cl  
 CCI IDS

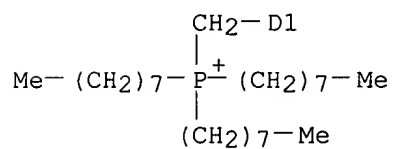
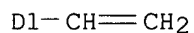


● Cl<sup>-</sup>

RN 151346-38-2 HCAPLUS  
 CN Phosphonium, [(ethenylphenyl)methyl]trioctyl-, chloride, polymer with  
 tributyl[(ethenylphenyl)methyl]phosphonium chloride (9CI) (CA INDEX NAME)

CM 1

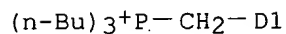
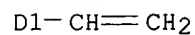
CRN 77519-20-1  
 CMF C33 H60 P . Cl  
 CCI IDS



● Cl<sup>-</sup>

CM 2

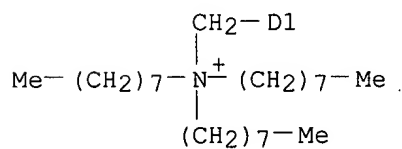
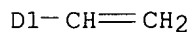
CRN 42808-25-3  
 CMF C21 H36 P . Cl  
 CCI IDS



RN 393869-24-4 HCAPLUS  
 CN Benzenemethanaminium, ar-ethenyl-N,N,N-trioctyl-, chloride, polymer with  
 N,N,N-tributyl-ar-ethenylbenzenemethanaminium chloride (9CI) (CA INDEX  
 NAME)

CM 1

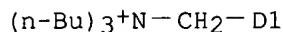
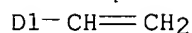
CRN 72852-27-8  
 CMF C33 H60 N . Cl  
 CCI IDS



CM 2

CRN 62017-56-5  
 CMF C21 H36 N . Cl  
 CCI IDS





● Cl-

L82 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2003 ACS

AN 2000:175815 HCAPLUS

DN 132:207956

TI Preparation of chemiluminescent 1,2-dioxetane derivatives  
containing phosphoryloxyphenyl moiety

IN Giri, Brij P.

PA USA

SO PCT Int. Appl., 69 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07F009-06

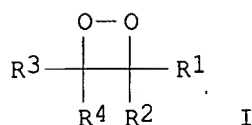
ICS C07D321-00; C07C043-166; C07C043-168; C07C043-178; C07F007-08;  
C07K017-02; G01N033-533

CC 29-7 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 7, 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000014092	A1	20000316	WO 1999-US20590	19990908
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	CA 2342979	AA	20000316	CA 1999-2342979	19990908
	AU 9959130	A1	20000327	AU 1999-59130	19990908
	EP 1112274	A1	20010704	EP 1999-946804	19990908
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
	US 6461876	B1	20021008	US 2000-643063	20000821
PRAI	US 1998-99693P	P	19980908		
	WO 1999-US20590	W	19990908		
OS	MARPAT 132:207956				
GI					



AB The title compds. I [(a) R1, R2 are each, individually, an active site or when fused together form an active site, and R3 and R4 are each, individually, an active site or when fused together form an active site or (b) R1 has at least two hetero atoms with active site and R3 and R4 are inactive and R2 active], useful as chemiluminescent compds. in assays of enzymes (no data), are prepd. These 1,2-dioxetanes have electron donating or withdrawing groups at the four-membered peroxide ring, thus, the 1,2-dioxetane ring hereof is affected by the added electronic charge.

ST oxetane phosphoryloxyphenyl moiety contg prepn chemiluminescent; chemiluminescent phosphoryloxyphenyl moiety contg **dioxetane** prepn; enzyme assay chemiluminescent phosphoryloxyphenyl moiety contg **dioxetane**

IT **Enzymes, biological studies**

RL: BSU (Biological study, unclassified); BIOL (Biological study) (detection; prepn. of chemiluminescent **dioxetane** derivs. for enzyme detection)

IT **Luminescence, chemiluminescence**

(prepn. of chemiluminescent **dioxetane** derivs. contg. phosphoryloxyphenyl moiety)

IT 260790-97-4P 260790-98-5P 260790-99-6P

260791-00-2P 260791-01-3P 260791-02-4P

260791-03-5P 260791-04-6P 260791-05-7P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of chemiluminescent **dioxetane** derivs. contg. phosphoryloxyphenyl moiety)

IT 67-56-1, Methanol, reactions 75-89-8, 2,2,2-Trifluoroethanol 94-41-7, Benzalacetophenone 99-06-9, 3-Hydroxybenzoic acid, reactions 108-94-1, Cyclohexanone, reactions 122-99-6, 2-Phenoxyethanol 123-72-8, Butyraldehyde 700-58-3, Adamantan-2-one 10025-87-3, Phosphorus oxychloride 18162-48-6, tert-Butyldimethylsilyl chloride 30525-89-4, Paraformaldehyde 34113-69-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of chemiluminescent **dioxetane** derivs. contg. phosphoryloxyphenyl moiety)

IT 2544-00-5P 2682-98-6P 16643-41-7P 19438-10-9P 20098-14-0P

20098-17-3P 21328-39-2P 24133-20-8P 69392-50-3P 99287-98-6P

120687-94-7P 166272-81-7P 179633-60-4P 179633-61-5P 260791-06-8P

260791-07-9P 260791-08-0P 260791-09-1P 260791-10-4P 260791-11-5P

260791-12-6P, Tricyclo[3.3.1.1<sup>3,7</sup>]dec-4-en-2-one 260791-13-7P

260791-14-8P 260791-15-9P 260791-16-0P 260791-17-1P 260791-18-2P

260791-19-3P 260791-20-6P 260791-21-7P 260791-22-8P 260791-23-9P

260791-24-0P 260791-25-1P 260791-26-2P 260791-27-3P 260791-28-4P

260791-29-5P 260791-30-8P 260791-31-9P 260791-32-0P 260791-33-1P

260791-34-2P 260791-35-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of chemiluminescent **dioxetane** derivs. contg. phosphoryloxyphenyl moiety)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Akhavan-Tafti; US 5721370 A 1998 HCAPLUS

(2) Bronstein; US 5112960 A 1992 HCAPLUS

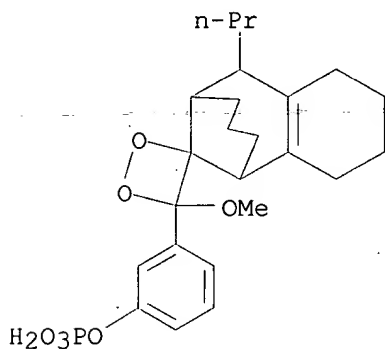
- (3) Bronstein; US 5679803 A 1997 HCAPLUS  
 (4) Brooks; US 5225584 A 1993 HCAPLUS  
 (5) Schaap; US 5004565 A 1991 HCAPLUS  
 (6) Schaap; US 5578253 A 1996 HCAPLUS

IT 260790-97-4P 260790-98-5P 260790-99-6P  
 260791-00-2P 260791-01-3P 260791-02-4P  
 260791-03-5P 260791-04-6P 260791-05-7P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of chemiluminescent **dioxetane** derivs. contg. phosphoryloxyphenyl moiety)

RN 260790-97-4 HCAPLUS

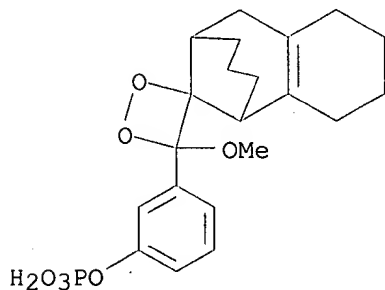
CN Phenol, 3-(1',2',3',4',5',6',7',8',9',10'-decahydro-4-methoxy-10'-propylspiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



● 2 Na

RN 260790-98-5 HCAPLUS

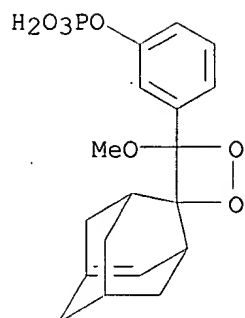
CN Phenol, 3-(1',2',3',4',5',6',7',8',9',10'-decahydro-4-methoxyspiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



2 Na

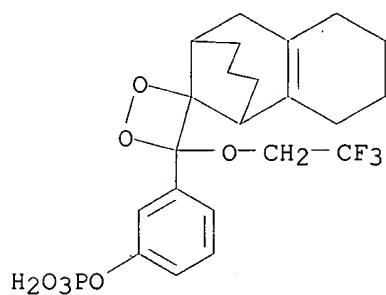
RN 260790-99-6 HCAPLUS

CN Phenol, 3-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3,7]dec[4]en]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



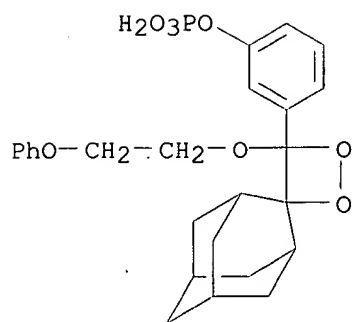
●2 Na

RN 260791-00-2 HCAPLUS  
 CN Phenol, 3-[1',2',3',4',5',6',7',8',9',10'-decahydro-4-(2,2,2-trifluoroethoxy)spiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl]-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



●2 Na

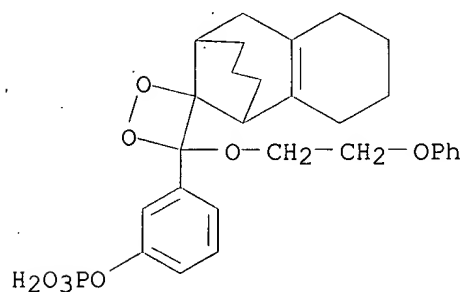
RN 260791-01-3 HCAPLUS  
 CN Phenol, 3-[4-(2-phenoxyethoxy)spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3]decan]-4-yl]-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



●2 Na

RN 260791-02-4 HCAPLUS

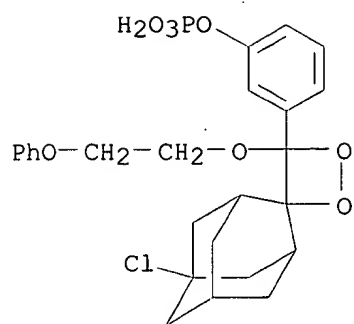
CN Phenol, 3-[1',2',3',4',5',6',7',8',9',10'-decahydro-4-(2-phenoxyethoxy)spiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl]-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



●2 Na

RN 260791-03-5 HCAPLUS

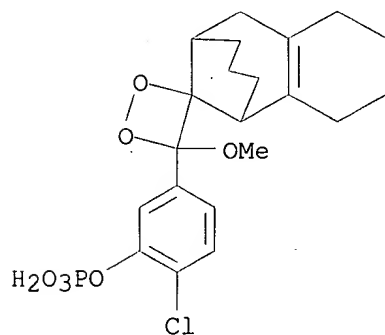
CN Phenol, 3-[5'-chloro-4-(2-phenoxyethoxy)spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3,7]decan]-4-yl]-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



● 2 Na

RN 260791-04-6 HCAPLUS

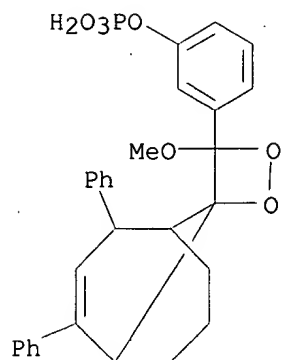
CN Phenol, 2-chloro-5-(1',2',3',4',5',6',7',8',9',10'-decahydro-4-methoxyspiro[1,2-dioxetane-3,11'-[5,9]methanobenzocycloocten]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



● 2 Na

RN 260791-05-7 HCAPLUS

CN Phenol, 3-(4'-methoxy-2,4-diphenylspiro[bicyclo[3.3.1]non-2-ene-9,3'-[1,2]dioxetan]-4'-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



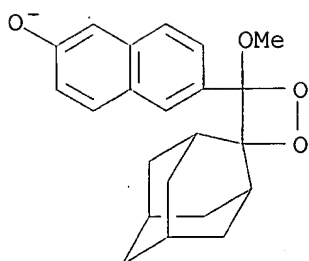
●2 Na

L82 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1988:423007 HCAPLUS  
 DN 109:23007  
 TI Chemical and enzymic triggering of 1,2-dioxetanes. 2.  
 Fluoride-induced chemiluminescence from tert-butyldimethylsilyloxy-substituted dioxetanes  
 AU Schaap, A. P.; Chen, T. S.; Handley, R. S.; DeSilva, R.; Giri, B. P.  
 CS Dep. Chem., Wayne State Univ., Detroit, MI, USA  
 SO Report (1987), TR-2-ONR, TR-3; Order No. AD-A178500/5/GAR, 11 pp. Avail.: NTIS  
 From: Gov. Rep. Announce. Index (U. S.) 1987, 87(13), Abstr. No. 727,001  
 DT Report  
 LA English  
 CC 29-6 (Organometallic and Organometalloidal Compounds)  
 Section cross-reference(s): 22  
 AB Thermally stable 1,2-dioxetanes bearing tert-butyldimethylsilyloxyaryl groups were prepd. Reaction of these dioxetanes with fluoride ion at ambient temp. in Me cyanate and DMSO generates chemiluminescence with efficiencies up to 25%.  
 ST dioxetane butyldimethylsilyloxyaryl chemiluminescence fluoride induced  
 IT Luminescence, chemi-  
 (of butyldimethylsilyloxyaryl dioxetanes, fluoride-induced)  
 IT 6788-84-7D, 1,2-Dioxetane, butyldimethylsilyloxyaryl-substituted  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (fluoride-induced chemiluminescence from)  
 IT 16984-48-8, Fluoride ion, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with butyldimethylsilyloxyaryl dioxetanes, chemiluminescence from)  
 IT 6788-84-7D, 1,2-Dioxetane, butyldimethylsilyloxyaryl-substituted  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (fluoride-induced chemiluminescence from)  
 RN 6788-84-7 HCAPLUS  
 CN 1,2-Dioxetane (6CI, 8CI, 9CI). (CA INDEX NAME)



L82 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1987:529703 HCAPLUS  
 DN 107:129703  
 TI Chemical and enzymatic triggering of 1,2-dioxetanes. 1: aryl  
 esterase-catalyzed chemiluminescence from a naphthyl acetate-substituted  
 dioxetane  
 AU Schaap, A. Paul; Handley, Richard S.; Giri, Brij P.  
 CS Dep. Chem., Wayne State Univ., Detroit, MI, 48202, USA  
 SO Tetrahedron Letters (1987), 28(9), 935-8  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 CC 7-3 (Enzymes)  
 AB A thermally stable 1,2-dioxetane bearing a naphthyl acetate  
 group was enzymically cleaved in aq. buffer to generate chemiluminescence  
 at ambient temp.  
 ST aryl esterase dioxetane hydrolysis chemiluminescence  
 IT Luminescence, chemi-  
 (aryl esterase- and base-catalyzed, from dioxetanes)  
 IT 9032-73-9, Aryl esterase  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (dioxetane hydrolysis by, chemiluminescence from)  
 IT 110347-75-6 110347-76-7  
 RL: FORM (Formation, nonpreparative)  
 (formation of, in dioxetane enzymic hydrolysis by aryl  
 esterase)  
 IT 110347-70-1 110347-71-2 110371-06-7  
 RL: PROC (Process)  
 (photooxygenation of, in presence of polymer-bound Rose  
 Bengal)  
 IT 110347-73-4P 110347-74-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and aryl esterase- or base-catalyzed chemiluminescence from)  
 IT 110347-72-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and thermal decompn. of)  
 IT 110347-75-6  
 RL: FORM (Formation, nonpreparative)  
 (formation of, in dioxetane enzymic hydrolysis by aryl  
 esterase)  
 RN 110347-75-6 HCAPLUS  
 CN 2-Naphthalenol, 6-(4-methoxyspiro[1,2-dioxetane-3,2'-  
 tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, ion(1-) (9CI) (CA INDEX NAME)



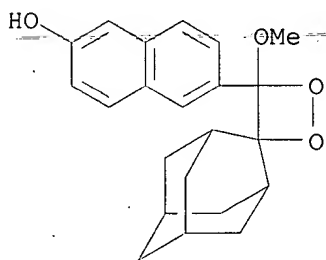


IT 110347-73-4P 110347-74-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and aryl esterase- or base-catalyzed chemiluminescence from).

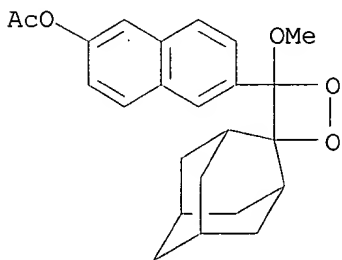
RN 110347-73-4 HCAPLUS

CN 2-Naphthalenol, 6-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3,7]decan]-4-yl)- (9CI) (CA INDEX NAME)



RN 110347-74-5 HCAPLUS

CN 2-Naphthalenol, 6-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3,7]decan]-4-yl)-, acetate (9CI) (CA INDEX NAME)



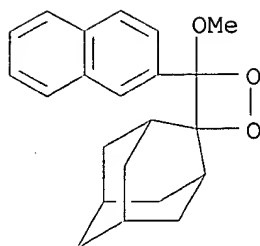
IT 110347-72-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)

(prepn. and thermal decompn. of)

RN 110347-72-3 HCAPLUS

CN Spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3,7]decane], 4-methoxy-4-(2-naphthalenyl)- (9CI) (CA INDEX NAME)



=> d 181 all hitstr tot

L81 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2003 ACS  
 AN 2002:716965 HCAPLUS  
 DN 137:244282  
 TI Quant-screen chemiluminescent assays for cells  
 IN Olesen, Corinne E. M.; Yan, Yu-xin; Bronstein, Irena Y.  
 PA USA  
 SO U.S. Pat. Appl. Publ., 29 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G01N021-76  
 NCL 436172000  
 CC 9-5 (Biochemical Methods)  
 Section cross-reference(s): 7, 13

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002132364	A1	20020919	US 2001-756209	20010109
PRAI	US 2001-756209		20010109		
OS	MARPAT 137:244282				

AB Chemiluminescent endogenous enzyme assays are disclosed which provide for the rapid, simple, and sensitive quantitation of cells directly in microwell cultures by the measurement of endogenous enzyme activity. These endogenous enzyme assays provide homogeneous chemiluminescent formats for measuring cell proliferation, growth inhibition, cell adhesion, cell migration, and cell no. quantitation and normalization. Methods and kits employing such assays are also provided. A Quant-Screen mammalian reaction buffer contg. 150 mM sodium phosphate, pH 5.5, 30 mM EDTA, 0.3 % Triton X-1000, 2 % sodium dodecylbenzenesulfonate, 0.6 mM Glucon, 1 M diethanolamine, pH 9.5, as accelerator, and 30 % **Sapphire-II** was used in growth stimulation and growth inhibition assays with 3T3 cells.

ST enzyme quant screen chemiluminescent assay cell; mammalian cell quant screen chemiluminescent assay

IT Animal cell line

(3T3; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)

IT Animal cell line

(K562; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)

IT Blood serum

(calf; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)

IT Yeast

(cells; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)

IT Cytotoxicity

- (detection of; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT **Enzymes, analysis**  
 RL: ANT (Analyte); ANST (Analytical study)  
 (endogenous; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT Culture media  
 (enrichment; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT Animal cell  
 (mammalian; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT Cell division  
 (measurement of inhibition of; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT Adhesion, biological  
 Cell migration  
 Cell proliferation  
 (measurement of; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT Onium compounds  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (~~polymeric~~ quaternary salts, as enhancers; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT Animal tissue culture  
 Buffers  
 Cell  
**Chemiluminescence spectroscopy**  
 Culture media  
 Cytolysis  
**Fluorescent substances**  
 High throughput screening  
 Human  
 Luminescence spectroscopy  
**Luminescent substances**  
 Microtiter plates  
 Saccharomyces cerevisiae  
 Schizosaccharomyces pombe  
 Test kits  
 (quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT Albumins, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (serum, as enhancers; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 9017-80-5, Polyvinylbenzyltrimethyl ammonium chloride  
 72852-29-0, Polyvinylbenzyltributylammonium chloride  
 135781-07-6 151346-37-1, Polyvinylbenzyltributylphosphonium chloride 459811-21-3 460090-23-7  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (as enhancer; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 50-76-0, Actinomycin D  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (in yeast growth inhibition studies; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 60-00-4, EDTA, uses 111-42-2, Diethanolamine, uses 7632-05-5, Sodium Phosphate 9002-93-1, Triton X-100  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (mammalian cell reaction buffer contg.; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 9001-92-7, Protease  
 RL: ANT (Analyte); ANST (Analytical study)

- (protease; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 9001-34-7, Galactosidase 9001-45-0, Glucuronidase 9001-77-8, Acid phosphatase 9001-78-9 9013-79-0, Esterase 9033-06-1, Glucosidase  
 RL: ANT (Analyte); ANST (Analytical study)  
 (quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 550-82-3, Alamar Blue 6788-84-7D, 1,2-Dioxetane, compds. 124951-96-8 142849-53-4 160081-62-9 189942-84-5, ADP-Star 201037-11-8, Glucon  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 143-74-8, Phenol red  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 62996-74-1, Staurosporine  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 56-81-5, Glycerol, uses 124-68-5, 2-Amino-2-methyl-1-propanol 7786-30-3, Magnesium chloride (MgCl<sub>2</sub>), uses 11024-24-1, Digitonin 25155-30-0, Sodium dodecylbenzenesulfonate  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (yeast reaction buffer contg.; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- IT 9017-80-5, Polyvinylbenzyltrimethyl ammonium chloride 72852-29-0, Polyvinylbenzyltributylammonium chloride 135781-07-6 151346-37-1, Polyvinylbenzyltributylphosphonium chloride  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (as enhancer; quant-screen chemiluminescent assays for cells by measuring endogenous enzymes)
- RN 9017-80-5 HCAPLUS
- CN Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 26616-35-3

CMF C12 H18 N . Cl

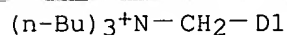
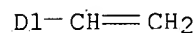
CCI IDS

D1-CH=CH<sub>2</sub>Me<sub>3</sub><sup>+</sup>N-CH<sub>2</sub>-D1Cl<sup>-</sup>

RN 72852-29-0 HCAPLUS  
 CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

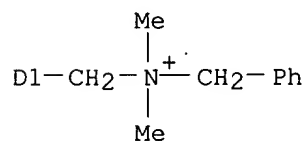
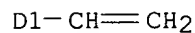
CRN 62017-56-5  
 CMF C21 H36 N . Cl  
 CCI IDS



RN 135781-07-6 HCAPLUS  
 CN Benzenemethanaminium, ar-ethenyl-N,N-dimethyl-N-(phenylmethyl)-, chloride,  
 homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62017-62-3  
 CMF C18 H22 N . Cl  
 CCI IDS



RN 151346-37-1 HCAPLUS

CN Phosphonium, tributyl[(ethenylphenyl)methyl]-, chloride, homopolymer (9CI)  
(CA INDEX NAME)

CM 1

CRN 42808-25-3

CMF C21 H36 P . Cl

CCI IDS



D1-CH=CH<sub>2</sub>

(n-Bu) 3<sup>+</sup>P-CH<sub>2</sub>-D1

● Cl<sup>-</sup>

IT 111-42-2, Diethanolamine, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(mammalian cell reaction buffer contg.; quant-screen chemiluminescent  
assays for cells by measuring endogenous enzymes)

RN 111-42-2 HCAPLUS

CN Ethanol, 2,2'-iminobis- (9CI) (CA INDEX NAME)

HO-CH<sub>2</sub>-CH<sub>2</sub>-NH-CH<sub>2</sub>-CH<sub>2</sub>-OH

IT 9001-78-9

RL: ANT (Analyte); ANST (Analytical study)  
(quant-screen chemiluminescent assays for cells by measuring endogenous  
enzymes)

RN 9001-78-9 HCAPLUS

CN Phosphatase, alkaline (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 6788-84-7D, 1,2-Dioxetane, compds. 124951-96-8

142849-53-4 160081-62-9 189942-84-5, ADP-Star

201037-11-8, Glucon

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(quant-screen chemiluminescent assays for cells by measuring endogenous  
enzymes)

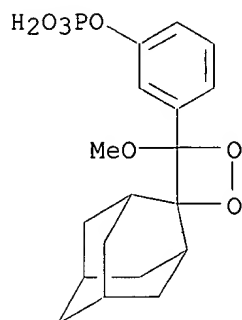
RN 6788-84-7 HCAPLUS

CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 124951-96-8 HCAPLUS

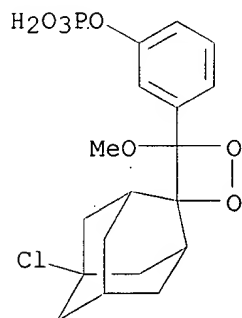
CN Phenol, 3-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



●2 Na

RN 142849-53-4 HCAPLUS

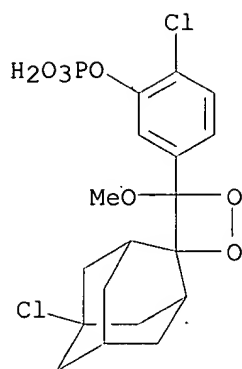
CN Phenol, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



●2 Na

RN 160081-62-9 HCAPLUS

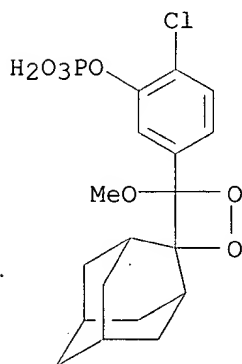
CN Phenol, 2-chloro-5-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



●2 Na

RN 189942-84-5 HCAPLUS

CN Phenol, 2-chloro-5-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



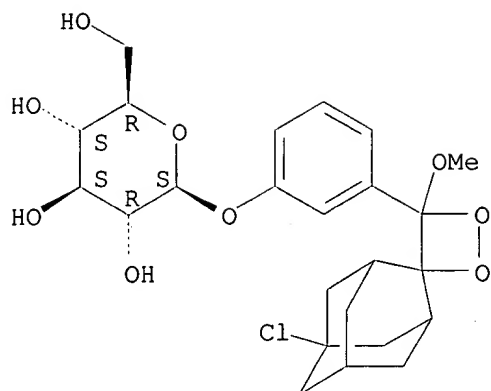
●2 Na

RN 201037-11-8 HCAPLUS

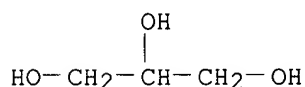
CN .beta.-D-Glucopyranoside, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3]decan]-4-yl)phenyl (9CI) (CA INDEX NAME)

Absolute stereochemistry.

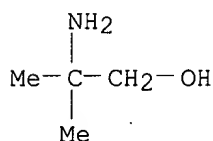




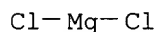
IT 56-81-5, Glycerol, uses 124-68-5, 2-Amino-2-methyl-1-propanol 7786-30-3, Magnesium chloride (MgCl<sub>2</sub>), uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (yeast reaction buffer contg.; quant-screen chemiluminescent assays for  
 cells by measuring endogenous enzymes)  
 RN 56-81-5 HCAPLUS  
 CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



RN 124-68-5 HCAPLUS  
 CN 1-Propanol, 2-amino-2-methyl- (8CI, 9CI) (CA INDEX NAME)



RN 7786-30-3 HCAPLUS  
 CN Magnesium chloride (MgCl<sub>2</sub>) (9CI) (CA INDEX NAME)



L81 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1997:505750 HCAPLUS  
 DN 127:119320  
 TI Multiple reporter gene assay  
 IN Bronstein, Irena Y.; Fortin, John J.; Martin, Chris S.; Voyta, John C.  
 PA Tropix, Inc., USA  
 SO PCT Int. Appl., 41 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C12Q001-68  
 CC 9-5 (Biochemical Methods)  
 Section cross-reference(s): 3, 7

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9724460	A1	19970710	WO 1996-US20650	19961223
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2241760	AA	19970710	CA 1996-2241760	19961223
	AU 9713502	A1	19970728	AU 1997-13502	19961223
	AU 732044	B2	20010412		
	EP 874913	A1	19981104	EP 1996-945044	19961223
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2000513563	T2	20001017	JP 1997-524534	19961223
PRAI	US 1995-579787	A	19951228		
OS	WO 1996-US20650	W	19961223		
AB	MARPAT 127:119320				
AB	A nonisotopic method of measuring the activity of at least two reporter gene products in an aliquot of a sample ext. is disclosed. The method is esp. useful for measuring transcriptional activity of cells transfected with >1 reporter gene. The activities of a first and second reporter enzyme (selected from luciferase, <b>.beta.-galactosidase</b> , <b>.beta.-glucuronidase</b> , <b>alk. phosphatase</b> , or carboxyl esterase) are quantified by measuring the light signal produced by degrdn. of a first substrate by the first reporter enzyme and the light signal produced by the degrdn. of a second substrate by a second reporter enzyme. Both quantifications are sequentially performed on the same aliquot of sample ext.				
ST	cell multiple reporter gene product detn; enzyme reporter multiple detn transcription; <b>dioxetane</b> substrate reporter enzyme chemiluminescence detn; transfection cell multiple reporter gene assay				
IT	Gene				
	(expression; multiple reporter gene assay)				
IT	Animal cell				
	(mammalian; multiple reporter gene assay)				
IT	Cell				
	<b>Chemiluminescence spectroscopy</b>				
	Test kits				
	Transcription, genetic				
	Transformation, genetic				
	(multiple reporter gene assay)				
IT	<b>Enzymes</b> , analysis				
	Reporter gene				
	RL: ANT (Analyte); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)				
	(multiple reporter gene assay)				
IT	Onium compounds				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)				
	(quaternary, <b>polymers</b> ; multiple reporter gene assay)				
IT	Albumins, uses				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)				
	(serum; multiple reporter gene assay)				
IT	<b>Polymers</b> , uses				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)				
	(water-sol.; multiple reporter gene assay)				
IT	9001-45-0, <b>.beta.-Glucuronidase</b> 9001-78-9 9014-00-0,				
	Luciferase 9016-18-6, Carboxyl esterase 9027-41-2, Hydrolase				
	9031-11-2, <b>.beta.-Galactosidase</b>				
	RL: ANT (Analyte); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)				
	(multiple reporter gene assay)				
IT	9017-80-5, Polyvinylbenzyltrimethylammonium chloride 62017-62-3				

151346-37-1, Polyvinylbenzyltributylphosphonium chloride  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(multiple reporter gene assay)

IT 2591-17-5, Luciferin 6788-84-7D, Dioxetane, enzyme  
substrates contg. 142849-71-6, Galacton 181285-38-1,  
Galacton-Plus 201037-71-0  
RL: ARG (Analytical reagent use); BPR (Biological process); BSU  
(Biological study, unclassified); ANST (Analytical study); BIOL  
(Biological study); PROC (Process); USES (Uses)  
(multiple reporter gene assay)

IT 111-42-2, Diethanolamine, uses  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(soln. contg.; multiple reporter gene assay)

IT 72852-29-0, Sapphire II  
RL: ARG (Analytical reagent use); BPR (Biological process); BSU  
(Biological study, unclassified); ANST (Analytical study); BIOL  
(Biological study); PROC (Process); USES (Uses)  
(soln. contg.; multiple reporter gene assay)

IT 9001-78-9 9031-11-2, .beta.-  
Galactosidase  
RL: ANT (Analyte); BAC (Biological activity or effector, except adverse);  
BSU (Biological study, unclassified); ANST (Analytical study); BIOL  
(Biological study)  
(multiple reporter gene assay)

RN 9001-78-9 HCAPLUS  
CN Phosphatase, alkaline (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9031-11-2 HCAPLUS  
CN Galactosidase, .beta.- (9CI) (CA INDEX NAME)

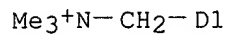
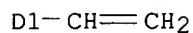
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9017-80-5, Polyvinylbenzyltrimethylammonium chloride  
151346-37-1, Polyvinylbenzyltributylphosphonium chloride  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(multiple reporter gene assay)

RN 9017-80-5 HCAPLUS  
CN Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, homopolymer  
(9CI) (CA INDEX NAME)

CM 1

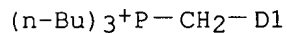
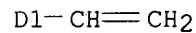
CRN 26616-35-3  
CMF C12 H18 N . Cl  
CCI IDS



RN 151346-37-1 HCAPLUS  
 CN Phosphonium, tributyl[(ethenylphenyl)methyl]-, chloride, homopolymer (9CI)  
 (CA INDEX NAME)

CM 1

CRN 42808-25-3  
 CMF C21 H36 P . Cl  
 CCI IDS



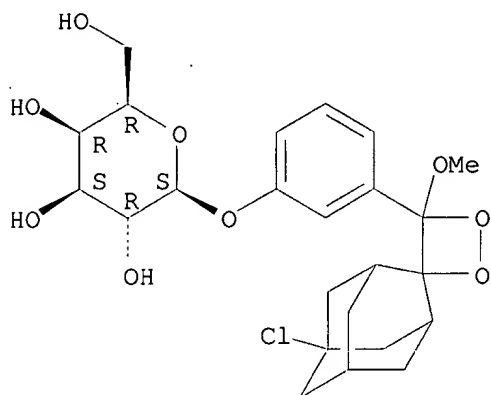
IT 6788-84-7D, Dioxetane, enzyme substrates contg.  
 142849-71-6, Galacton 181285-38-1, Galacton-Plus  
 201037-71-0  
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU  
 (Biological study, unclassified); ANST (Analytical study); BIOL  
 (Biological study); PROC (Process); USES (Uses)  
 (multiple reporter gene assay)  
 RN 6788-84-7 HCAPLUS  
 CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 142849-71-6 HCAPLUS

CN .beta.-D-Galactopyranoside, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)phenyl (9CI) (CA INDEX NAME)

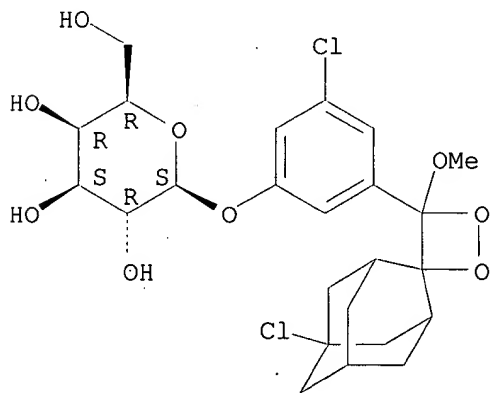
Absolute stereochemistry.



RN 181285-38-1 HCAPLUS

CN .beta.-D-Galactopyranoside, 3-chloro-5-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)phenyl (9CI) (CA INDEX NAME)

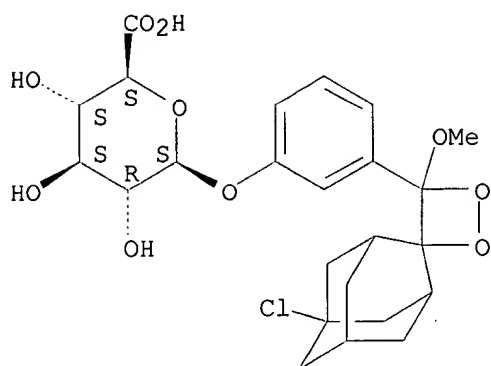
Absolute stereochemistry.



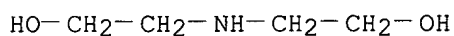
RN 201037-71-0 HCAPLUS

CN .beta.-D-Glucopyranosiduronic acid, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)phenyl (9CI) (CA INDEX NAME)

Absolute stereochemistry.



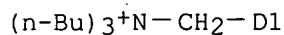
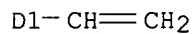
IT 111-42-2, Diethanolamine, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (soln. contg.; multiple reporter gene assay)  
 RN 111-42-2 HCAPLUS  
 CN Ethanol, 2,2'-iminobis- (9CI) (CA INDEX NAME)



IT 72852-29-0, Sapphire II  
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU  
 (Biological study, unclassified); ANST (Analytical study); BIOL  
 (Biological study); PROC (Process); USES (Uses)  
 (soln. contg.; multiple reporter gene assay)  
 RN 72852-29-0 HCAPLUS  
 CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

CRN 62017-56-5  
 CMF C21 H36 N . Cl  
 CCI IDS



DN 126:206907  
 TI Di-substituted 1,2-dioxetane compounds having increased water solubility and assay compositions  
 IN Akhavan-Tafti, Hashem; De Silva, Renuka; Schaap, Paul A.  
 PA Board of Governors of Wayne State University, USA; Lumigen, Inc.  
 SO Eur. Pat. Appl., 25 pp.  
 CODEN: EPXXDW

DT Patent

LA English

IC ICM C07F009-655

ICS G01N033-533; C07D321-00; C07F009-12; C07C069-708

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 9, 28, 29

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 757052	A1	19970205	EP 1996-112386	19960731
	EP 757052	B1	20030219		
	R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	US 5777135	A	19980707	US 1995-509305	19950731
	IL 118934	A1	20000131	IL 1996-118934	19960724
	CA 2182325	AA	19970201	CA 1996-2182325	19960730
	AU 9660818	A1	19970206	AU 1996-60818	19960730
	AU 703632	B2	19990325		
	JP 09249659	A2	19970922	JP 1996-216922	19960731
	JP 3290592	B2	20020610		
	AT 232876	E	20030315	AT 1996-112386	19960731
	US 5804103	A	19980908	US 1997-842728	19970416
	AU 9889605	A1	19990211	AU 1998-89605	19981029
	AU 719065	B2	20000504		
PRAI	US 1995-509305	A	19950731		
	AU 1996-60818	A3	19960730		

OS MARPAT 126:206907

AB Stable, enzymically triggered chemiluminescent, 1,2-dioxetanes with improved water soly. are provided. **Dioxetanes** further substituted with two or more water-solubilizing groups disposed on the **dioxetane** structure provide superior performance by eliminating the problem of reagent carryover when used in assays performed on capsule chem. anal. systems. Compns. comprising a **dioxetane** with two or more water-solubilizing groups, a **nonpolymeric** cationic surfactant enhancer and optionally a fluorester, for providing enhanced chemiluminescence are also provided.

ST water soluble chemiluminescent **dioxetane** reagent

IT **Luminescence, chemiluminescence**

(prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)

IT **151346-37-1**, Poly(vinylbenzyltributylphosphonium chloride) 163342-81-2, 1-Trioctylphosphoniummethyl-4-tributylphosphoniummethylbenzene dichloride

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (enhancer; prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)

IT **124-68-5**, 2-Amino-2-methyl-1-propanol 2321-07-5, Fluorescein 6358-69-6, Pyranine 7439-95-4, Magnesium, uses 9002-93-1, Triton X-100

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)

IT **187655-25-0P**, [4-((3,3-Biscarboethoxy)propoxy)-4-(3-phosphoryloxyphenyl)]spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decane], tetrasodium salt **187655-27-2P**, [4-(3-Carboxypropoxy)-4-(3-phosphoryloxyphenyl)]spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decane]

RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)

IT **67-56-1**, Methanol, reactions 99-06-9, 3-Hydroxybenzoic acid, reactions 105-53-3, Diethyl malonate 107-07-3, 2-Chloroethanol, reactions 109-78-4, 2-Cyanoethanol 110-86-1, Pyridine, reactions 121-44-8, reactions 141-52-6, Sodium ethoxide 143-33-9, Sodium cyanide (NaCN) 429-41-4, Tetrabutylammonium fluoride 538-75-0, DCC 627-30-5, 3-Chloro-1-propanol 700-58-3, Adamantanone 1122-58-3, DMAP 1310-73-2, Sodium hydroxide (NaOH), reactions 7681-82-5, Sodium iodide (NaI), reactions 7705-07-9, Titanium chloride (TiCl<sub>3</sub>), reactions 7782-44-7, Oxygen, reactions 10025-87-3, Phosphorus chloride oxide (PCl<sub>3</sub>O) 11121-48-5D, Rose Bengal, **polymer** bound 16853-85-3  
18162-48-6, tert-Butyldimethylsilyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)

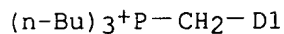
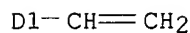
IT 133258-97-6P, [(2-Chloroethoxy)-(3-tert-butyldimethylsilyloxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 133259-04-8P, 2-Chloroethyl-3-hydroxybenzoate 133259-05-9P, 2-Chloroethyl-3-tert-butyldimethylsilyloxybenzoate 133259-06-0P, [(2-Chloroethoxy)-(3-hydroxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 133259-07-1P, [(3-Hydroxyphenyl)-(2-iodoethoxy)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 142149-09-5P, 3-Chloropropyl-3-hydroxybenzoate 142149-11-9P, [3-Chloropropyl-3-(tert-butyldimethylsilyloxyphenyl)-(3-chloropropoxy)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 142149-12-0P 142149-13-1P, [(3-Cyanopropoxy)-(3-hydroxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 142149-14-2P, [(3-Carboxypropoxy)-(3-hydroxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 187655-28-3P, [(3,3-Biscarboethoxy)propoxy)-(3-hydroxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 187655-29-4P, [(3,3-Biscarboethoxy)propoxy)-(3-(bis-(2-cyanoethyl)phosphoryloxy)phenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 187655-30-7P, [(3,3-Biscarboethoxy)propoxy)-(3-phosphoryloxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane, tetrasodium salt 187655-31-8P, 3-Chloropropyl-3-(tert-butyldimethylsilyloxy)benzoate 187655-32-9P, [(3-Carbomethoxypropoxy)-(3-hydroxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane 187655-34-1P, [(3-Carboxypropoxy)-(3-phosphoryloxyphenyl)methylene]tricyclo[3.3.1.1<sup>3,7</sup>]decane, trisodium salt 187879-94-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)

IT **151346-37-1**, Poly(vinylbenzyltributylphosphonium chloride)  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(enhancer; prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)  
RN 151346-37-1 HCAPLUS  
CN Phosphonium, tributyl[(ethenylphenyl)methyl]-, chloride, homopolymer (9CI)  
(CA INDEX NAME)

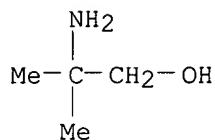
CM 1

CRN 42808-25-3  
CMF C21 H36 P . Cl  
CCI IDS

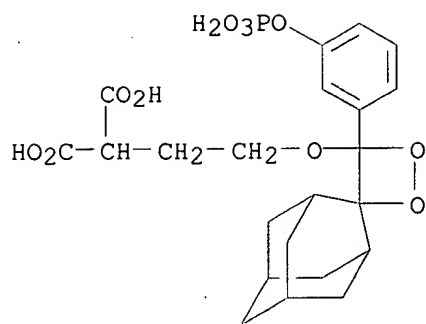




IT 124-68-5, 2-Amino-2-methyl-1-propanol  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (prepn. of water sol. chemiluminescent di-substituted **dioxetane**  
 reagents)  
 RN 124-68-5 HCAPLUS  
 CN 1-Propanol, 2-amino-2-methyl- (8CI, 9CI) (CA INDEX NAME)

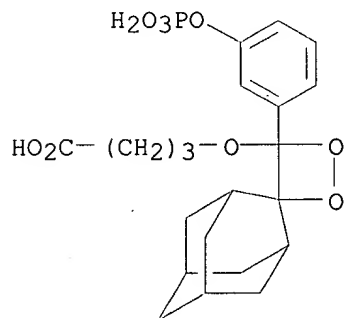


IT 187655-25-0P, [4-((3,3-Biscarboethoxy)propoxy)-4-(3-phosphoryloxyphenyl)]spiro[1,2-**dioxetane**-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decane], tetrasodium salt 187655-27-2P, [4-(3-Carboxypropoxy)-4-(3-phosphoryloxyphenyl)]spiro[1,2-**dioxetane**-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decane]  
 RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
 (prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)  
 RN 187655-25-0 HCAPLUS  
 CN Propanedioic acid, [2-[[4-[3-(phosphonooxy)phenyl]spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl]oxy]ethyl]-, tetrasodium salt (9CI) (CA INDEX NAME)



●4 Na

RN 187655-27-2 HCAPLUS  
 CN Butanoic acid, 4-[[4-[3-(phosphonooxy)phenyl]spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3,7]decan]-4-yl]oxy]-, trisodium salt (9CI) (CA INDEX NAME)



●3 Na

IT 67-56-1, Methanol, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of water sol. chemiluminescent di-substituted **dioxetane** reagents)  
 RN 67-56-1 HCAPLUS  
 CN Methanol (8CI, 9CI) (CA INDEX NAME)

H<sub>3</sub>C-OH

L81 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1997:204102 HCAPLUS  
 DN 126:183507  
 TI Improved capsule chemistry analytical methods employing **dioxetane** chemiluminescence  
 IN Adolfsen, Robert H.; Akhavan-Tafti, Hashem; De Silva, Renuka; Schaap, Paul A.  
 PA Board of Governors of Wayne State University, USA; Bayer A.-G.

SO Eur. Pat. Appl., 22 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM G01N033-52  
 ICS G01N033-58  
 CC 9-5 (Biochemical Methods)  
 Section cross-reference(s): 15, 28  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 757248	A2	19970205	EP 1996-112385	19960731
	EP 757248	A3	19970723		
	EP 757248	B1	20010523		
	R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	US 5631167	A	19970520	US 1995-509692	19950731
	IL 118935	A1	20001121	IL 1996-118935	19960724
	CA 2182326	AA	19970201	CA 1996-2182326	19960730
	AU 9660817	A1	19970206	AU 1996-60817	19960730
	AU 719699	B2	20000518		
	JP 09184810	A2	19970715	JP 1996-216921	19960731
	ES 2159333	T3	20011001	ES 1996-112385	19960731
PRAI	US 1995-509692	A	19950731		
OS	MARPAT 126:183507				
AB	Improved assay methods utilizing stable, enzymically triggered chemiluminescent 1,2-dioxetanes with improved water soly. are provided. Assays are performed by a capsule chem. anal. assay method wherein fluid capsules comprising discrete aq. segments contg. either a chemiluminescent <b>dioxetane</b> reagent or an activating agent sepd. by an oil-based isolating fluid are flowed through a conduit and subsequently reacted to produce light. The improvement comprises using a <b>dioxetane</b> substituted with two or more water-solubilizing groups disposed on the <b>dioxetane</b> structure to provide the chemiluminescence. Compns. comprising such a <b>dioxetane</b> , a non-polymeric surfactant enhancer, and optionally a fluorescer, provide enhanced chemiluminescence and eliminate the problem of reagent carryover when used in assays performed on capsule chem. anal. systems.				
ST	capsule chem analysis chemiluminescence <b>dioxetane</b> prepn				
IT	Antibodies				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (alk. <b>phosphatase</b> conjugates; improved capsule chem. anal. methods using <b>dioxetane</b> chemiluminescence)				
IT	Surfactants				
	(cationic; improved capsule chem. anal. methods using <b>dioxetane</b> chemiluminescence)				
IT	Capsules				
	<b>Chemiluminescence spectroscopy</b> <b>Fluorescent substances</b>				
	Immunoassay (improved capsule chem. anal. methods using <b>dioxetane</b> chemiluminescence)				
IT	<b>Enzymes, uses</b>				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (improved capsule chem. anal. methods using <b>dioxetane</b> chemiluminescence)				
IT	9002-71-5, TSH				
	RL: ANT (Analyte); ANST (Analytical study) (improved capsule chem. anal. methods using <b>dioxetane</b> chemiluminescence)				
IT	9001-78-9				
	RL: ANT (Analyte); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); ANST (Analytical study); BIOL				

(Biological study)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

IT 2321-07-5, Fluorescein 6358-69-6, Pyranine **142849-53-4**, CSPD  
**151346-37-1 151346-38-2**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

IT **6788-84-7DP**, 1,2-Dioxetane, derivs. **187655-25-0P**  
**187655-26-1P 187655-27-2P**  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST  
(Analytical study); PREP (Preparation); USES (Uses)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

IT **124-68-5**, 2-Amino-2-methyl-1-propanol 9002-93-1, Triton X-100  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

IT **67-56-1**, Methanol, reactions 99-06-9, 3-Hydroxybenzoic acid,  
reactions 105-53-3, Diethyl malonate 107-07-3, 2-Chloroethanol,  
reactions 109-78-4, 2-Cyanoethanol 143-33-9, Sodium cyanide  
627-30-5, 3-Chloro-1-propanol 700-58-3, Adamantanone 10025-87-3,  
Phosphoric trichloride 18162-48-6, tert-Butyldimethylsilyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

IT 133258-97-6P 133259-04-8P, 2-Chloroethyl-3-hydroxybenzoate  
133259-05-9P 133259-06-0P 133259-07-1P 142149-09-5P 142149-11-9P  
142149-12-0P 142149-13-1P 142149-14-2P 187655-28-3P 187655-29-4P  
187655-30-7P 187655-31-8P 187655-32-9P 187655-33-0P 187655-34-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

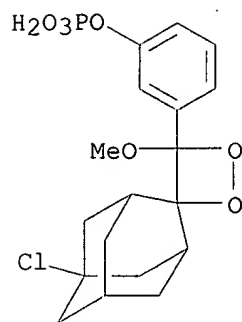
IT **9001-78-9**  
RL: ANT (Analyte); BAC (Biological activity or effector, except adverse);  
BSU (Biological study, unclassified); ANST (Analytical study); BIOL  
(Biological study)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

RN 9001-78-9 HCAPLUS  
CN Phosphatase, alkaline (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT **142849-53-4**, CSPD **151346-37-1 151346-38-2**  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

RN 142849-53-4 HCAPLUS  
CN Phenol, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-  
tricyclo[3.3.1.1.3,7]decan]-4-yl)-, dihydrogen phosphate, disodium salt  
(9CI) (CA INDEX NAME)



● 2 Na

RN 151346-37-1 HCAPLUS  
 CN Phosphonium, tributyl[(ethenylphenyl)methyl]-, chloride, homopolymer (9CI)  
 (CA INDEX NAME)

CM 1

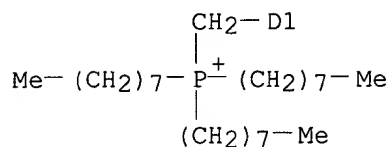
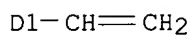
CRN 42808-25-3  
 CMF C21 H36 P . Cl  
 CCI IDS

D1-CH=CH<sub>2</sub>(n-Bu)<sub>3</sub><sup>+</sup>P-CH<sub>2</sub>-D1● Cl<sup>-</sup>

RN 151346-38-2 HCAPLUS  
 CN Phosphonium, [(ethenylphenyl)methyl]trioctyl-, chloride, polymer with  
 tributyl[(ethenylphenyl)methyl]phosphonium chloride (9CI) (CA INDEX NAME)

CM 1

CRN 77519-20-1  
 CMF C33 H60 P . Cl  
 CCI IDS

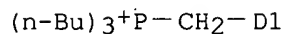
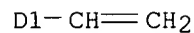


CM 2

CRN 42808-25-3

CMF C21 H36 P . Cl

CCI IDS



IT 6788-84-7DP, 1,2-Dioxetane, derivs. 187655-25-0P  
187655-26-1P 187655-27-2P

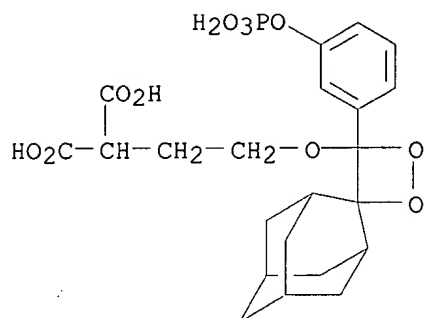
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST  
(Analytical study); PREP (Preparation); USES (Uses)  
(improved capsule chem. anal. methods using **dioxetane**  
chemiluminescence)

RN 6788-84-7 HCAPLUS

CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)

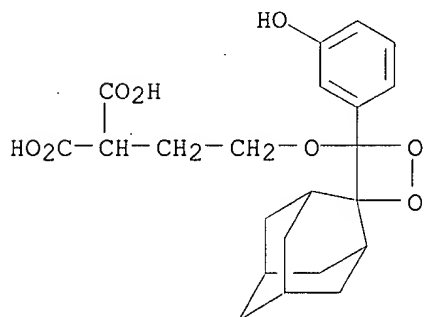


RN 187655-25-0 HCAPLUS  
 CN Propanedioic acid, [2-[[4-[3-(phosphonooxy)phenyl]spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3</sup>,7]decan]-4-yl]oxy]ethyl]-, tetrasodium salt (9CI) (CA INDEX NAME)



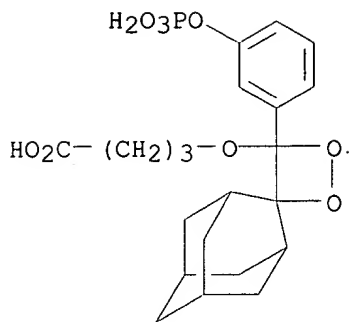
● 4 Na

RN 187655-26-1 HCAPLUS  
 CN Propanedioic acid, [2-[[4-(3-hydroxyphenyl)spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3</sup>,7]decan]-4-yl]oxy]ethyl]-, disodium salt (9CI) (CA INDEX NAME)



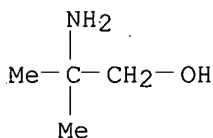
● 2 Na

RN 187655-27-2 HCAPLUS  
 CN Butanoic acid, 4-[[4-[3-(phosphonooxy)phenyl]spiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3</sup>,7]decan]-4-yl]oxy]-, trisodium salt (9CI) (CA INDEX NAME)



●3 Na

IT 124-68-5, 2-Amino-2-methyl-1-propanol  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (improved capsule chem. anal. methods using **dioxetane**  
 chemiluminescence)  
 RN 124-68-5 HCAPLUS  
 CN 1-Propanol, 2-amino-2-methyl- (8CI, 9CI) (CA INDEX NAME)



IT 67-56-1, Methanol, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (improved capsule chem. anal. methods using **dioxetane**  
 chemiluminescence)  
 RN 67-56-1 HCAPLUS  
 CN Methanol (8CI, 9CI) (CA INDEX NAME)

H<sub>3</sub>C-OH

L81 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1996:546523 HCAPLUS  
 DN 125:269847  
 TI Enhancement of chemiluminescent assays  
 IN Bronstein, Irena Y.; Edwards, Brooks; Voyta, John C.  
 PA Tropix, Inc., USA  
 SO U.S., 21 pp., Cont.-in-part of U.S. Ser. No. 959,531.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C12Q001-68  
 ICS G01N033-53  
 NCL 435006000  
 CC 9-5 (Biochemical Methods)  
 Section cross-reference(s): 7, 80  
 FAN.CNT 16  
 PATENT NO. KIND DATE APPLICATION NO. DATE



PI	US 5547836	A	19960820	US 1993-31471	19930315
	US 5112960	A	19920512	US 1990-574786	19900830
	JP 04124185	A2	19920424	JP 1990-239764	19900910
	JP 11021285	A2	19990126	JP 1996-86324	19910830
	US 5330900	A	19940719	US 1991-806928	19911212
	US 5639907	A	19970617	US 1992-959531	19921013
	WO 9421821	A1	19940929	WO 1994-US2549	19940315
	W: AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KG, KP, KR, KZ, LK, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, TJ, TT, UA, UZ, VN				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9464449	A1	19941011	AU 1994-64449	19940315
	EP 689611	A1	19960103	EP 1994-912204	19940315
	EP 689611	B1	20020130		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 08507694	T2	19960820	JP 1994-521100	19940315
	EP 1120652	A1	20010801	EP 2001-102819	19940315
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
	AT 212722	E	20020215	AT 1994-912204	19940315
	US 5543295	A	19960806	US 1994-233085	19940425
	US 5679802	A	19971021	US 1995-433996	19950504
	US 5654154	A	19970805	US 1996-588260	19960118
	US 5831102	A	19981103	US 1996-598353	19960208
	US 5994073	A	19991130	US 1997-850009	19970501
	US 5856522	A	19990105	US 1997-882330	19970625
PRAI	US 1990-574786	A3	19900830		
	US 1991-806928	A2	19911212		
	US 1992-959531	A2	19921013		
	US 1989-367772	B3	19850515		
	US 1986-889823	A1	19860724		
	US 1987-140197	B2	19871231		
	US 1990-559152	A2	19900725		
	JP 1991-518245	A3	19910830		
	US 1993-31471	A	19930315		
	EP 1994-912204	A3	19940315		
	WO 1994-US2549	W	19940315		
	US 1994-233085	A1	19940425		
	US 1995-433996	A1	19950504		
	US 1996-588260	A1	19960118		
OS	MARPAT 125:269847				
AB	Chemiluminescent bioassays for the detection or quantitation of an analyte in a sample use 1,2-dioxetanes as substrates for the enzyme of an enzyme complex that binds to the analyte. The chemiluminescence obtained from the decompn. of the dioxetane triggered by the enzyme through the formation of the corresponding 1,2-dioxetane oxyanion of the enzyme complex is enhanced by the addn. of TBQ [poly(vinylbenzyltributylammonium chloride)] as an enhancement agent. Other polymeric quaternary onium salts can be used as enhancement agents in conjunction with enhancement additives which improve the ability of the enhancement agent to form hydrophobic regions in the aq. sample, in which regions the 1,2-dioxetane oxyanion and its chemiluminescent decompn. products can be sequestered. A kit for performing such assays is also provided.				
ST	chemiluminescence assay bioassay enzyme dioxetane substrate				
IT	Quaternary ammonium compounds, uses				
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (Lanoquat; chemiluminescent bioassays using enzymes with dioxetane substrates and enhancement agents)				
IT	Alcohols, uses				
	Detergents				
	Enzymes				

Phosphonium compounds

Polymers, uses

Salts, uses

Sulfonium compounds

Surfactants

Turpentine

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

IT **Spectrochemical analysis**

(chemiluminescence, chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

IT Onium compounds

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(quaternary, salts, chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

IT Quaternary ammonium compounds, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(tri-C8-10-alkylmethyl, chlorides, chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

IT 57-09-0, CTAB 67-63-0, 2-Propanol, uses 121-54-0, Benzethonium chloride 122-18-9, Benzyltrimethylammonium chloride 123-96-6, 2-Octanol 139-08-2, Benzyltrimethyltetradecylammonium chloride 151-21-3, SDS, uses 1464-44-4 1652-63-7, FC 135 4688-40-8, Sodium benzyl sulfate 7281-04-1, Benzyltrimethyldodecyl ammonium bromide 7585-39-9, .beta.-Cyclodextrin 9002-89-5, Polyvinyl alcohol 9002-92-0, PO 23LE 9002-93-1, Triton x 100 9002-98-6, Polyethylenimine 9002-98-6D, Polyethylenimine, benzylated 9003-05-8D, Polyacrylamide, aminomethylated 9003-08-1, Aerotex M-3 9003-09-2, Polyvinyl methyl ether 9005-64-5, Tween 20 9005-65-6, Tween 80 9014-92-0 9017-80-5, Poly(vinylbenzyltrimethylammonium chloride 9036-19-5, Nonidet p-40 9042-14-2, Dextran sulfate 14937-45-2, Hexadecyltributyl phosphonium bromide 24979-97-3, Polytetrahydrofuran 25104-37-4, Polyvinyl ethyl ether 25155-30-0, Sodium dodecyl benzenesulfonate 25322-68-3 25322-69-4, Polypropylene glycol 25805-17-8, Poly(2-ethyl-2-oxazoline) 25988-97-0, Agefloc B50 28728-55-4, Polybrene 29836-26-8 39288-98-7, DAXAD 53754-72-6, Poly-1,1-dimethyl-3,5-dimethylenepiperidinium chloride 54692-47-6, Zelec DP 56602-33-6, BOP 72852-29-0, Poly(vinylbenzyltributylammonium chloride) 75621-03-3, CHAPS 78564-79-1, Avitex ML 82473-24-3, CHAPSO 92183-41-0, Celquat H100 106392-12-5, Pluronic 122 124951-96-8, AMPPD 135781-07-6 142849-53-4, CSPD 146908-11-4, Avitex E 161697-30-9 161697-31-0 161697-48-9 162534-60-3, Agefloc A50HV 162534-61-4, Hipofix DDD 162534-62-5, Hipofix 491 162534-63-6, Hipofix DD-NF 162534-65-8, Celquat SC240 182176-66-5, Avitex DN 182213-96-3 182241-24-3  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

IT 6788-84-7D, 1,2-Dioxetane, derivs.

RL: ARG (Analytical reagent use); BPR (Biological process); BSU

(Biological study, unclassified); ANST (Analytical study); BIOL

(Biological study); PROC (Process); USES (Uses)

(chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

IT 67-63-0, 2-Propanol, uses 9017-80-5,

Poly(vinylbenzyltrimethylammonium chloride 72852-29-0,

Poly(vinylbenzyltributylammonium chloride) 124951-96-8, AMPPD

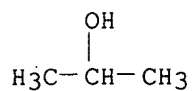
135781-07-6 142849-53-4, CSPD 161697-30-9

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

RN 67-63-0 HCAPLUS

CN 2-Propanol (9CI) (CA INDEX NAME)



RN 9017-80-5 HCAPLUS

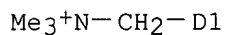
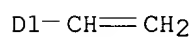
CN Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, homopolymer  
(9CI) (CA INDEX NAME)

CM 1

CRN 26616-35-3

CMF C12 H18 N . Cl

CCI IDS



RN 72852-29-0 HCAPLUS

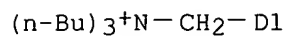
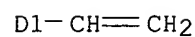
CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, homopolymer  
(9CI) (CA INDEX NAME)

CM 1

CRN 62017-56-5

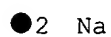
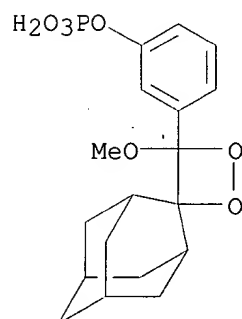
CMF C21 H36 N . Cl

CCI IDS



RN 124951-96-8 HCAPLUS

CN Phenol, 3-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



RN 135781-07-6 HCAPLUS

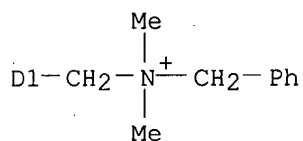
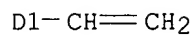
CN Benzenemethanaminium, ar-ethenyl-N,N-dimethyl-N-(phenylmethyl)-, chloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 62017-62-3

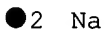
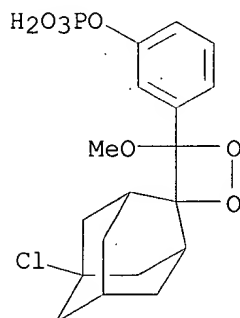
CMF C18 H22 N . Cl

CCI IDS



RN 142849-53-4 HCAPLUS

CN Phenol, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



RN 161697-30-9 HCAPLUS

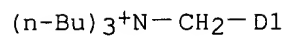
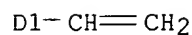
CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, polymer with ar-ethenyl-N,N,N-trihexylbenzenemethanaminium chloride (9CI) (CA INDEX NAME)

CM. 1

CRN 62017-56-5

CMF C21 H36 N . Cl

CCI IDS

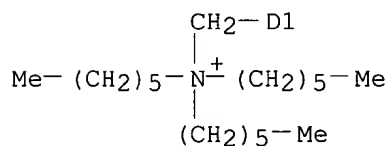
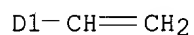


CM 2

CRN 59535-22-7

CMF C27 H48 N . Cl

CCI IDS



IT 6788-84-7D, 1,2-Dioxetane, derivs.

RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
(chemiluminescent bioassays using enzymes with **dioxetane** substrates and enhancement agents)

RN 6788-84-7 HCAPLUS

CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)



L81 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:511642 HCAPLUS

DN 122:260574

TI Buffer and substrate and sensitivity enhancer for **alkaline phosphatase** determination

IN Sugiyama, Masami; Isomura, Mitsuo; Saruta, Hiroko; Ashihara, Yoshihiro

PA Fujirebio Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C12Q001-42

CC 9-15 (Biochemical Methods)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07031499	A2	19950203	JP 1993-200171	19930721
	JP 3146778	B2	20010319		
PRAI	JP 1993-200171		19930721		

OS MARPAT 122:260574

AB The disclosed buffer is a deriv. of amine or aminosulfonic acid, the substrate is a deriv. of AMPPD, and the sensitivity enhancer is a **polymer** of deriv. of trialkyl(vinylbenzyl)ammonium salt. In example, AMPPD (substrate) and polyvinylbenzyl(benzyltrimethylammonium)chloride (BDMQ; sensitivity enhancer) were used in conjunction to DEA-HCl, DEA-BES, TEA-BES, DEA-MOPS, DEA-CAPS, DEA-TAPS, and DEA-CAPSO for quantification of **alk. phosphatase** in an immunoassay with immobilized anti-.alpha.-fetoprotein (or TSH) and phosphatase-labeled anti-.alpha.-fetoprotein (or TSH) for .alpha.-fetoprotein (or TSH) detn.

ST **alk phosphatase** buffer substrate enhancer immunoassay

IT Antibodies

RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(**alk. phosphatase**-labeled antibody to TSH or .alpha.-fetoprotein and buffer and substrate and sensitivity enhancer for **alk. phosphatase** detn.)

IT Amines, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study) (alkyl derivs.; amine deriv. buffer and AMPPD substrate and sensitivity-enhancing trialkyl(vinylbenzyl)ammonium salt **polymer** are used for **alk. phosphatase** detn.)

IT Fetoproteins

RL: ANT (Analyte); ANST (Analytical study) (.alpha.-, **alk. phosphatase**-labeled antibody to TSH or .alpha.-fetoprotein and buffer and substrate and sensitivity enhancer for **alk. phosphatase** detn.)

IT 9002-71-5, TSH

RL: ANT (Analyte); ANST (Analytical study) (**alk. phosphatase**-labeled antibody for TSH detn. and buffer and substrate and sensitivity enhancer for **alk. phosphatase** detn.)

IT 102-71-6, Triethanolamine, analysis 110-85-0D, Piperazine, sulfonyl derivs.; salts 110-91-8D, Morpholine, sulfonyl derivs.; salts 1132-61-2, MOPS 1135-40-6, CAPS 9017-80-5D, Vinylbenzyltrimethylammonium chloride **polymer**, analogs 10191-18-1, BES 14426-21-2, Diethanolamine hydrochloride 29915-38-6, TAPS 72852-29-0D, analogs 73463-39-5, CAPSO 122341-56-4D, derivs.; salts 135781-07-6 142456-88-0D, derivs.; salts RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(amine deriv. buffer and AMPPD substrate and sensitivity-enhancing trialkyl(vinylbenzyl)ammonium salt **polymer** are used for **alk. phosphatase** detn.)

IT 9001-78-9D, Alkaline phosphatase, alkyl derivs.

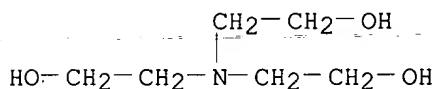
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(amine deriv. buffer and AMPPD substrate and sensitivity-enhancing trialkyl(vinylbenzyl)ammonium salt **polymer** are used for **alk. phosphatase** detn. in immunoassay)

IT 102-71-6, Triethanolamine, analysis 9017-80-5D, Vinylbenzyltrimethylammonium chloride **polymer**, analogs 72852-29-0D, analogs 122341-56-4D, derivs.; salts 135781-07-6 142456-88-0D, derivs.; salts

RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(amine deriv. buffer and AMPPD substrate and sensitivity-enhancing trialkyl(vinylbenzyl)ammonium salt **polymer** are used for **alk. phosphatase** detn.)

RN 102-71-6 HCAPLUS

CN Ethanol, 2,2',2''-nitrilotris- (9CI), (CA INDEX NAME)



RN 9017-80-5 HCAPLUS

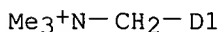
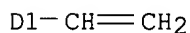
CN Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 26616-35-3

CMF C12 H18 N . Cl

CCI IDS



● Cl<sup>-</sup>

RN 72852-29-0 HCAPLUS

CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, homopolymer (9CI) (CA INDEX NAME)

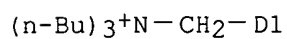
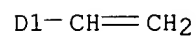
CM 1

CRN 62017-56-5

CMF C21 H36 N . Cl

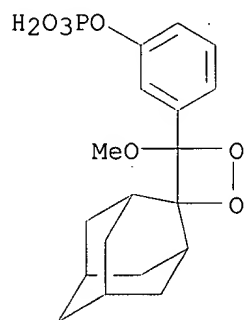


CCI IDS



RN 122341-56-4 HCAPLUS

CN Phenol, 3-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate (9CI) (CA INDEX NAME)



RN 135781-07-6 HCAPLUS

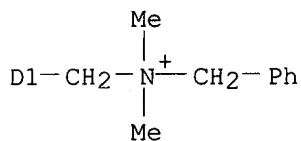
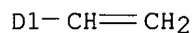
CN Benzenemethanaminium, ar-ethenyl-N,N-dimethyl-N-(phenylmethyl)-, chloride, homopolymer (9CI) (CA INDEX NAME)

CM 1

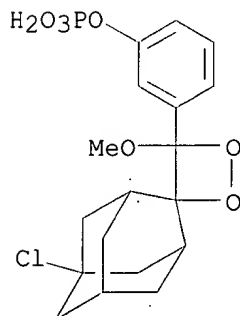
CRN 62017-62-3

CMF C18 H22 N . Cl

CCI IDS



RN= 142456-88-0 HCAPLUS  
 CN Phenol, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate (9CI) (CA INDEX NAME)



IT 9001-78-9D, Alkaline phosphatase, alkyl derivs.  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (amine deriv. buffer and AMPPD substrate and sensitivity-enhancing trialkyl(vinylbenzyl)ammonium salt **polymer** are used for **alk. phosphatase** detn. in immunoassay)  
 RN 9001-78-9 HCAPLUS  
 CN Phosphatase, alkaline (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L81 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2003 ACS  
 AN 1995:169405 HCAPLUS  
 DN 122:260545  
 TI Additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates  
 IN Bronstein, Irena Y.; Edwards, Brooks; Voyta, John C.  
 PA Tropix, Inc., USA  
 SO PCT Int. Appl., 61 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English

IC ICM C12Q001-68

CC 9-5 (Biochemical Methods)

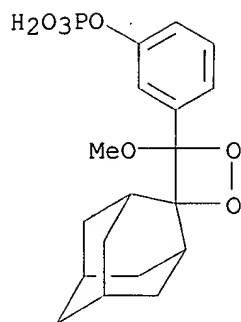
FAN.CNT 16

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9421821	A1	19940929	WO 1994-US2549	19940315
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	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5547836	A	19960820	US 1993-31471	19930315
	AU 9464449	A1	19941011	AU 1994-64449	19940315
	EP 689611	A1	19960103	EP 1994-912204	19940315
	EP 689611	B1	20020130		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 08507694	T2	19960820	JP 1994-521100	19940315
	AT 212722	E	20020215	AT 1994-912204	19940315
	US 5856522	A	19990105	US 1997-882330	19970625
PRAI	US 1993-31471	A	19930315		
	US 1990-574786	A3	19900830		
	US 1991-806928	A2	19911212		
	US 1992-959531	A2	19921013		
	WO 1994-US2549	W	19940315		
	US 1995-433996	A1	19950504		
OS	MARPAT 122:260545				
AB	Disclosed is additives for enhancing chemiluminescent bioassays for the presence or concn. of an analyte in a sample use 1,2-dioxetanes as substrates for the enzyme of an enzyme complex that bind to the analyte. The additives include surfactant (e.g. Tween 20), solvent (e.g. isopropanol, polyvinyl alc.), and water-sol. polymers (e.g. polymeric quaternary onium salts). The chemiluminescence obtained from the decompn. of the dioxetane triggered by the enzyme through the formation of the corresponding 1,2-dioxetane oxyanion of the enzyme complex is enhanced by the addn. of poly(vinylbenzyltributylammonium chloride) as an enhancement agent. Other polymeric quaternary onium salts can be used as enhancement agents in conjunction with enhancement additives which improve the ability of the enhancement agent to form hydrophobic regions in the aq. sample, in which regions the 1,2-dioxetane oxyanion and its chemiluminescent decompn. products can be sequestered. A kit for performing such assays is also provided.				
ST	additive chemiluminescence bioassay enhancement; polymeric quaternary ammonium salt; sulfonium polymeric quaternary salt; phosphonium polymeric quaternary salt; surfactant solvent detergent additive chemiluminescence bioassay				
IT	Detergents Solvents Surfactants (additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)				
IT	Phosphonium compounds RL: MOA (Modifier or additive use); USES (Uses) (polymeric; additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)				
IT	Polymers, uses RL: MOA (Modifier or additive use); USES (Uses) (water-sol.; additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)				
IT	Sulfonium compounds RL: MOA (Modifier or additive use); USES (Uses) (polymers, quaternary and salts; additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)				

- IT Quaternary ammonium compounds, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (polymers, salts; additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)
- IT Quaternary ammonium compounds, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (tri-C8-10-alkylmethyl, chlorides, Adogen 464; additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)
- IT 6788-84-7, 1,2-Dioxetane 124951-96-8, AMPPD  
 142849-53-4, CSPD  
 RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)
- IT 57-09-0, Cetyl trimethyl ammonium bromide 67-63-0, Isopropanol, uses 121-54-0, Benzethonium chloride 122-18-9, Benzyldimethylcetylammonium chloride 123-96-6, 2-Octanol 151-21-3, SDS, uses 1464-44-4 7585-39-9, .beta. Cyclodextrin 9002-89-5, Poly(vinyl alcohol) 9002-92-0, Polyoxyethylene-23-lauryl ether 9002-93-1, Triton X 100 9002-98-6, PEI 9002-98-6D, benzylated 9003-05-8D, Polyacrylamide, Aminomethylated 9003-08-1, Aerotex M-3 9003-09-2, Poly(vinyl methyl ether) 9005-64-5, Tween 20 9005-65-6, Tween 80 9017-80-5, Poly(vinylbenzyltrimethylammonium chloride) 9042-14-2, Dextran sulfate 14937-45-2, Hexadecyltributylphosphonium bromide 24979-97-3, Poly(tetrahydrofuran) 25104-37-4, Poly(vinyl ethyl ether) 25155-30-0, Sodium dodecylbenzenesulfonate 25322-68-3, Poly(ethylene oxide) 25322-69-4, Polypropylene glycol 25805-17-8, Poly(2-ethyl-2-oxazoline) 28728-55-4, Polybrene 39288-98-7, DAXAD 41444-50-2, Octyl glucoside 53754-72-6 54692-47-6, Zelec DP 56602-33-6, BOP 62227-68-3 72852-29-0 75621-03-3, CHAPS 77322-08-8, FC-15 78564-79-1, Avitex ML 82473-24-3, CHAPSO 92183-41-0, Celquat H 100 106392-12-5, Pluronic 123 135781-07-6 153569-63-2, Agefloc B 50 161697-30-9 161697-31-0 161697-46-7 161697-47-8 161697-48-9 162534-59-0, Agefloc A 50 162534-60-3, Agefloc A 50HV 162534-61-4, Hipofix DDD 162534-62-5, Hipofix 491 162534-63-6, Hipofix DD-NF 162534-64-7, Nonidet P 400 162534-65-8, Celquat SC 240  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)
- IT 6788-84-7, 1,2-Dioxetane 124951-96-8, AMPPD  
 142849-53-4, CSPD  
 RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (additives for enhancing chemiluminescent assays using 1,2-dioxetanes as substrates)
- RN 6788-84-7 HCAPLUS  
 CN 1,2-Dioxetane (6CI, 8CI, 9CI) (CA INDEX NAME)

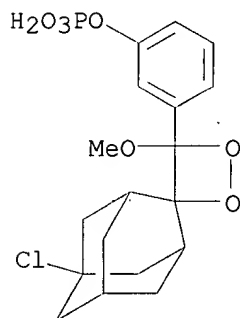


- RN 124951-96-8 HCAPLUS  
 CN Phenol, 3-(4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1<sup>3,7</sup>]decan]-4-yl)-, dihydrogen phosphate, disodium salt (9CI) (CA INDEX NAME)



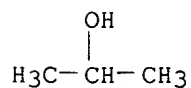
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RN 142849-53-4 HCAPLUS  
 CN Phenol, 3-(5'-chloro-4-methoxyspiro[1,2-dioxetane-3,2'-tricyclo[3.3.1.1.3,7]decan]-4-yl)-, dihydrogen phosphate, disodium salt  
 (9CI) (CA INDEX NAME)



●2 Na

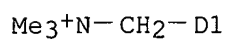
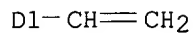
IT 67-63-0, Isopropanol, uses 9017-80-5,  
 Poly(vinylbenzyltrimethylammonium chloride) 72852-29-0  
 135781-07-6 161697-30-9  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (additives for enhancing chemiluminescent assays using 1,2-  
 dioxetanes as substrates)  
 RN 67-63-0 HCAPLUS  
 CN 2-Propanol (9CI) (CA INDEX NAME)



RN 9017-80-5 HCAPLUS  
 CN Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

CRN 26616-35-3  
CMF C12 H18 N . Cl  
CCI IDS

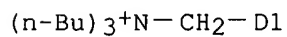
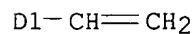


● Cl<sup>-</sup>

RN 72852-29-0 HCAPLUS  
CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, homopolymer  
(9CI) (CA INDEX NAME)

CM 1

CRN 62017-56-5  
CMF C21 H36 N . Cl  
CCI IDS

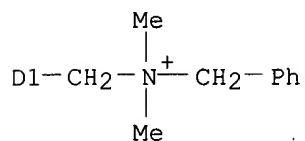
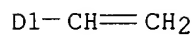


● Cl<sup>-</sup>

RN 135781-07-6 HCAPLUS  
CN Benzenemethanaminium, ar-ethenyl-N,N-dimethyl-N-(phenylmethyl)-, chloride,  
homopolymer (9CI) (CA INDEX NAME)

CM 1

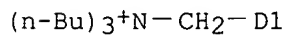
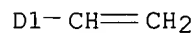
CRN 62017-62-3  
CMF C18 H22 N . Cl  
CCI IDS



RN 161697-30-9 HCAPLUS  
 CN Benzenemethanaminium, N,N,N-tributyl-ar-ethenyl-, chloride, polymer with  
 ar-ethenyl-N,N,N-trihexylbenzenemethanaminium chloride (9CI) (CA INDEX  
 NAME)

CM 1

CRN 62017-56-5  
 CMF C21 H36 N . Cl  
 CCI IDS



CM 2

CRN 59535-22-7  
 CMF C27 H48 N . Cl  
 CCI IDS

